

Notice of Allowability

Application No.

10/822,383

Applicant(s)

GREIM, HELMUT

Examiner

Art Unit

Tiffany A. Fetzner

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/19/2007 & the telephonic interview of 4/10/2007.
2. ☒ The allowed claim(s) is/are Examiner amended claims 1, 8, and dependent claims 2-7 and 9-17.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>4/10/2007</u> |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with **Attorney Steven H. Noll Reg. No. 28,982** on April 10th 2007 along with authorization to charge any necessary fees to applicant's deposit account.
3. The application has been amended as follows:

A) **Replace claim 1 of the March 19th 2007 amendment and response with the following Examiner amended claim 1:**

Claim 1 ---An antenna element **configured** for magnetic resonance applications comprising:

an antenna element sub-section extending along a section axis;

an auxiliary circuit disposed adjacent to said **antenna element** sub-section, said auxiliary circuit comprising a coupling section and an auxiliary circuit section;

said auxiliary circuit being inductively coupled to said **antenna element** sub-section by said coupling section, and said auxiliary circuit section proceeding parallel to said **antenna element** sub-section at a distance from said section axis **than said coupling section**; and

said auxiliary circuit comprising controllable tuning elements, **connected between said auxiliary circuit section and said coupling section**, having **respective non-coinciding first, second and third** control states, the respective control states being selectively controllable to cause a radio frequency excitation current **distribution** flowing in said **antenna element** sub-section **along said section axis** to produce an auxiliary current in said auxiliary current section **that leads** said excitation current **when said tuning elements are in said first control state**, and an auxiliary current in said auxiliary current section that lags said excitation current **when said tuning elements**

are in said second control state and no auxiliary current in said auxiliary circuit section when said tuning elements are in said third control state. ---

B) Replace claim 8 of the March 19th 2007 amendment and response with the following Examiner amended claim 8:

Claim 8 --- An antenna arrangement **configured** for magnetic resonance applications comprising:

a plurality of antenna elements disposed parallel to each other, each of said antenna elements comprising a sub-section extending along a section axis;

an auxiliary circuit disposed adjacent to said sub-section, said auxiliary circuit comprising a coupling section and an auxiliary circuit section, said auxiliary circuit being inductively coupled to said sub-section by said coupling section, and said auxiliary circuit section proceeding parallel to said sub-section at a **larger** distance from said section axis; **than said coupling section** and

said auxiliary circuit comprising controllable tuning elements, connected **between said auxiliary circuit section and second coupling section** having **non-coinciding first, second and third** control states, the respective control states being selectively controllable to cause a radio frequency excitation **distribution** current flowing in said sub-section **along said section axis** to produce an auxiliary current in said auxiliary circuit section **that leads** said excitation current when **said tuning elements are in said first control state**, and an auxiliary current in said auxiliary circuit **that lags** said excitation current **when said tuning, elements are in said second control state**, and no auxiliary current in said auxiliary circuit section **when said tuning elements are in said third control state**. ---

The following is an examiner's statement of **Reasons for Allowance**:

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4. With respect to **Examiner independent claim 1** and **Examiner independent claim 8**: These claims are considered to be allowable over the prior art of record because the prior art of record neither discloses nor suggests an MRI antenna element/arrangement comprising the complete combinational configuration of the MR antenna element/arrangement set forth as a whole in each of the examiner amended independent **claims 1** and **8**. It is the entire combination of the antenna claim limitations taken as a whole that constitutes both the novelty and non-obviousness of applicant's claims.

5. With respect to **dependent claims 2-7** and **dependent claims 9-17** these claims are considered to be allowable over the prior art of record because they each depend from an allowable examiner amended independent claim.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Examiner's Comment

Request for Continued Examination

7. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **March 19th 2007** has been entered.

Priority

8. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

9. The replacement drawings of figures 3 and 4 submitted August 28th 2006 overcome the objections of June 14th 2006 Office Action.

Specification

10. The amendments to the disclosure from the August 28th 2006 amendment and response are approved by the examiner and are considered to be free of new matter.

Response to Arguments

11. Applicant's arguments filed 3/19/2007 have been fully considered and they are persuasive in view of the 3/19/2007 amendments to the claims, which properly amends the claims in line with applicant's March 19th 2007 RCE arguments.

Prior Art made of Record

12. The **prior art made of record** and not relied upon is considered pertinent to applicant's disclosure.

- A) **Misic** US patent 6,040,697 issued March 21st 2000
- B) **Srinivasan** US patent 6,850,064 B1 issued Feb. 1st 2005, filed November 22, 2000 with an effective US priority date of November 24th 1999.
- C) See all of the references noted on the **June 14th 2006** Notice of References Cited.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tiffany Fetzner whose telephone number is: (571) 272-2241. The examiner can normally be reached on Monday-Thursday from 7:00am to 4:30pm., and on alternate Friday's from 7:00am to 3:30pm.

14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez, can be reached at (571) 272-2245. The **only official fax phone number** for the organization where this application or proceeding is assigned is **(571) 273-8300**.

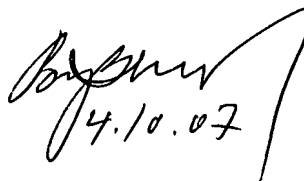
15. Information regarding the status of an application may be obtained from the Patent Application information Retrieval (PAIR) system Status information for published applications may be obtained from either Private PMR or Public PMR. Status information for unpublished applications is available through Private PMR only. For

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more information about the PMR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PMR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TAF

April 10, 2007



4.10.07

BRIJ SHRIVASTAV
PRIMARY EXAMINER